

**IN THE DESCRIPTION:**

**Page 4, lines 14 – 21:**

The circuit interrupting device also includes a ~~reset~~trip portion that operates independently of the circuit interrupting portion. The ~~reset~~trip portion is disposed at least partially within the housing and is configured to cause electrical discontinuity in the phase and/or neutral conductive paths independently of the operation of the circuit interrupting portion. The ~~reset~~trip portion includes a trip actuator, such as a button marked “TEST” which is accessible from the exterior of the receptacle face and a contact arm located within the housing and which extends from the trip actuator. The ~~contact arm~~trip portion is configured to facilitate a mechanical breaking of electrical continuity in the phase and /or neutral conductive paths when ~~the reset~~it is operated.

**Page 5, lines 5 – 6:**

Preferred embodiments of the present application are described herein with reference to the drawings in which similar elements ~~are~~are given similar reference characters, wherein:

**Page 6, line 24 – Page 7, line 7:**

Generally, the circuit interrupting portion is used to automatically break electrical continuity in one or more conductive paths (i.e. open the conductive path) between the line and load sides upon the detection of a fault, which in the embodiments described is a ground fault. The reset button is used to close the open conductive paths. The blocking member, which can be positioned to prevent the prongs of a plug from entering the openings in the receptacle when a fault is detected, is activated by a ~~trip~~connecting arm connected to at least one of the movable contact arms acting through a lifting member between the line side and the load side. The reset is used to disable the reset lockout, close the open conductive paths and reset the blocking member to its second or open position to permit a plug to be inserted into the receptacle if the circuit is operational. The reset and reset lockout portions operate in conjunction with the

operation of the circuit interrupting portion, so that electrical continuity cannot be reestablished and the blocking member continues to block at least one opening of the receptacle to prevent the prongs of a plug from entering the receptacle if the circuit interrupting portion is not operational, if an open neutral condition exists and/or if the device is reverse wired.

**Page 8, lines 6 – 26:**

The conductive path between the line phase connector 34 and the load phase connector 36 includes contacts on contact arm 50 which is movable between a stressed and an unstressed position, movable contact 52 mounted to the movable contact arm 50, fixed contact arm 54 secured to or monolithically formed into the load phase connection 36 and fixed contact 56 mounted to the fixed contact arm 54. The user accessible load phase connection for this embodiment includes terminal assembly 58 having two binding terminals 60 which are capable of engaging a prong of a male plug inserted there between. The conductive path between the line phase connection 34 and the user accessible load phase connection includes, contact arm 50, movable contact 62 mounted to contact arm 50, fixed contact arm 64 secured to or monolithically formed into terminal assembly 58, and fixed contact 66 mounted to fixed contact arm 64. These conductive paths are collectively called the phase conductive path.

Similar to the above, the conductive path between the line neutral connector 38 and the load neutral connector 40 includes, contacts on contact arm 70 which is movable between a stressed and an unstressed position, movable contact 72 mounted to movable contact arm 70, fixed contact arm 74 secured to or monolithically formed into load neutral connection 40, and fixed contact 76 mounted to the fixed contact arm 74. The user accessible load neutral connection for this embodiment includes terminal assembly 78 having two binding terminals 80 which are capable of engaging a prong of a male plug inserted there between. The conductive path between the line neutral connector 38 and the user accessible load neutral connector includes, contact arm 70, contact arm 84 secured to or monolithically formed into terminal assembly 78, and fixed contact 86 mounted to contact arm 84. These conductive paths are collectively called the neutral conductive path.

**Page 10, line 16 – Page 13, line 16:**

To reset the GFCI receptacle so that contacts 52 and 56 are closed and continuity in the phase conductive path is re-established, the reset button 30 is depressed sufficiently to overcome the bias force of return spring 120 (Fig. 3) and moves the latch member 100 in the direction of arrow A. Depressing the reset button 30 causes the latch finger 102 to contact side L of the movable contact arm 50 and, continued depression of the reset button 30, forces the latch member to overcome the stress force exerted by the arm 50 to cause the reset contact 104 on the arm 50 to close on reset contact 106. Closing the reset contacts activates the operation of the circuit interrupter by, for example simulating a fault, so that plunger 92 moves the banger 94 upwardly striking the latch member 100 which pivots the latch finger 102, while the latch member 100 continues to move in the direction of arrow A. As a result, the latch finger 102 is lifted over side L of the remote end 116 of the movable contact arm 50 onto side R of the remote end of the movable contact arm. Contact arm 50 now returns to its unstressed position, opening ~~contacts 52 and 56; and contacts 62 and 66~~ contacts 104 and 106; to terminate the activation of the circuit interrupting portion, thereby de-energizing the coil assembly 90.

After the circuit interrupter operation is activated, the coil assembly 90 is de-energized, plunger 92 returns to its original extended position, banger 94 releases the latch member 100 and latch finger 102 is in a reset position. Release of the reset button causes the latching member 100 and movable contact arm 50 to move in the direction of arrow B until contact 52 electrically engages contact 56, as seen in Fig. 2.

Referring to Fig. 7, there is shown a GFCI having a blocking member which is selectively operated to block plug receiving openings in the face of the receptacle when the GFCI is in its tripped state. A lifting member 200 made of insulating material is rigidly connected at one end by rivets of the like to movable contact arm 50 (see Fig. 3) at a convenient location such as location E and at its other end to a ~~trip~~ connecting arm 202. The top of ~~trip~~ connecting arm supports a projection 204 bent to provide a downward sloping surface which slidably engages a U shaped member 206 having two blocking shutters 208, 210. The U shaped member is located within the housing of the receptacle between the face portion 16 and

the central body 14, and is free to slide back and forth to allow openings in the shutters to be in or out of alignment with at least one of the openings 20, 21, ~~22~~. Springs 212 located within receiving openings 214 urge the U shaped member to be in engagement with the downward sloping surface of projection 204. Each blocking member 208, 210 has a window ~~214~~ 215, 216 and an obstruction 218, 220 where the obstructions are located to block at least one of the prong receiving openings 20, 21, ~~22~~ of each plug when the ~~trip~~ connecting arm is in its down position X; and the windows are located to be in alignment with and permit the prongs of a plug to be inserted into the receptacles when the connecting arm is in its up position 2.

Referring to Fig. 1, the U shaped blocking member 206 (shown in dotted outline in the plug blocking position), is made of insulating material and is located within the body of the receptacle immediately behind the face portion of housing 12, and the blocking members 208, 210 are positioned to assume a first position to block at least one opening, such as openings 21 in the receptacle or a second position which locates the windows ~~214~~ 215, 216 to be in alignment with the openings 21 in the receptacle. The U shaped member is located between the plug receiving openings in the face portion of the receptacle and top end of the electrical contacts associated with that opening. Returning to Fig. 7, the end 204 of ~~trip~~ connecting arm 202 has a ramp section which slidably engages a centrally located edge 222 of U shaped member 206. Trip-Connecting arm 202, being connected to the contact arm 50 (see Fig. 2), is moved up when the contact arm is moved up, and is moved down when the contact arm moves down. ~~(is positioned to allow an edge of the free end 116 of the contact arm 50 to sequentially engage the ramp section 212 and the land section 214 of cantilever member 200.)~~ The geometries of the ramp section 222 of connecting arm 202 and the centrally located edge 222 of the U shaped member 206, and their positions relative to each other are such that the contact arm 50 positions the ~~trip~~ connecting arm 202 to its up position Z when the GFCI is not in a fault state; and the contact arm 50 positions the ~~trip~~ connecting arm 202 to its down position X when the GFCI is in a fault state. Thus, when the GFCI is not in a fault condition, contact arm 50 is in its up position (see Fig. 2) which positions the ~~trip~~ connecting arm to its raised position Z. When the ~~trip~~ connecting arm is in its raised or up position, the U shaped member 206 and the blocking members are moved against the force of the springs 212 to position the windows ~~212, 214~~ 215,

216 to be in alignment with the cooperating prong receiving openings of the receptacle, and the prongs of a plug can freely enter the receptacle openings. Similarly, when the contact arm 50 is in its down position, the ~~trip~~ connecting arm 202 is moved toward its down position X and the U shaped member 206 and blocking members ~~208, 210~~ 218, 220 are moved ~~to~~ by the force of the springs ~~224~~ 212 to position the ~~blocking members~~ obstructions 208, 210 to be positioned behind at least one opening of each of the receptacles to prevent the prongs of a plug from entering a receptacle.

Thus, in operation, the ~~blocking members~~ obstructions block at least one prong receiving opening of each receptacle when the GFCI is in the tripped state. Once a reset is attempted, if functional, as the reset button is released it lifts the contact arm 50 which closes the main contacts. As this happens, the contact arm 50 which is connected to the ~~trip~~ connecting arm 202, moves connecting arm 202 to its up position Z and the ramp section of the projection 204 engages the centrally located edge 222 to drive the U shaped member against the force ~~or of~~ the springs ~~224~~ 212 to position the windows ~~214, 216~~ 216, 218 to be in alignment with their cooperating openings in the receptacle. It is noted that connecting arm 202 may be prevented from moving up if a plug is in the receptacle when the receptacle is tripped.

Referring to the prior art schematic diagram shown in Fig. 5, the circuit of the GFCI for detecting faults utilizes bridge contacts to ensure protection for the receptacle contacts. More specifically, contact arm 50 supports two contacts 52 and 62. Contact 52 cooperates with contact 56 and contact 62 cooperates with contact 66. In operation, when the prior art GFCI is in its no fault state, contacts 52 and 56 are closed and contacts 62 and 66 are closed to allow receptacle contact 60 to be connected to the load phase contact 36. When the GFCI is in its fault state, contacts 52 and 62 are not connected to contacts 56 and 66 respectively. Contacts 52, 56 and 62, 66 are referred to as bridge contacts. They provide isolation of the line phase contact 34 from the load phase contact 36 and the receptacle contact 60. In a similar manner, bridge contacts 72, 76 and 82, 86 provided isolation of the line neutral contact 38 from the load neutral contact 40 and the receptacle contact 80. A more economical and simpler method of separating the line neutral contact 38 and line phase contact 34 from the receptacle contacts and the load contacts is disclosed in Fig. 6. Referring specifically to contact arm 50, movable contact 62 which

cooperates with fixed contact 66 are not required and are eliminated and lead 61 from receptacle contact 60 is connected at point 39 to lead 37 which connects load contact 36 to contact 56. In a similar manner, movable contact 82 attached to contact arm 70 and which cooperates with fixed contact 86 are not now required and are eliminated, and lead 81 from receptacle contact 80 is connected at point 43 to lead 41 which connects contact 40 to contact 76. With the new improved circuit of Fig. 6, the contacts 60, 80 of the receptacle and the contacts 36, 40 of the load are connected together and they, in turn, are connected to the line contacts 34, 38 only when the GFCI is in a no fault state. Under normal operating conditions when there is no fault on the line, current flow is from the line contacts through the GFCI to the load contacts 36, 40 and to the receptacle contacts 60, 80.